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choices for metropolitan growth

If life in the future metropolis is to be worthy of the massive effort necessary to build it, the physical pattern must satisfy human values. The co-ordination of metropolitan development, however obligatory, will not of itself ensure this happy result. Co-ordination must be directed toward some desired general pattern, and, to define this we must clarify our alternatives and the goals they are meant to serve.

Kevin Lynch

The Pattern of the Metropolis
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FOREWORD

The Task Force on Urbanization and the Future has been established to examine aspects of urbanization which are of concern to the people of Alberta. At the present time, both the Calgary and Edmonton Regional Planning Commissions are proposing to conduct studies to determine growth policies for the two metropolitan areas. To help stimulate wider discussion on this important issue, this publication provides background information and raises pertinent questions. Its purpose essentially is to summarize the state of the debate on this matter at this point in time.

March, 1972

CONTENTS

Introduction	5
Present Situation	8
Concentration and Dispersal of Urban Growth in Alberta	8
The Significance of Urban Form Studies	9
The Nature of Urban Form Studies	13
(a) Organization	13
(b) The Elements of the Study	13
Alternative Forms of Growth	14
Experience In Other Areas	15
Goals and Objectives — What Kind of Urban Environment Do We Want?	17
Summary	18



INTRODUCTION

At the present time, discussion on the urban form of our metropolitan areas is engaging the attention of our planning agencies, of citizen groups and of all three levels of government.

The Calgary and Edmonton Regional Planning Commissions in co-operation with the Provincial Government and the two cities are each undertaking urban form studies for their metropolitan areas; on a federal level, aspects of this issue are considered in a recent study (Urban Canada—Problems and Prospects).¹ On a non-governmental level, such groups as the Alberta Chamber of Commerce and the University of Alberta Interdepartmental Committee on Environmental Quality have concerned themselves with questions of metropolitan expansion.

The focus of interest on this matter arises from the fact that certain problems are becoming ever more critical although the issues are not of recent vintage. The growth trends in our major metropolitan areas in Alberta have been consistent, and the implications of these trends have been apparent for the past decade. What are some of these trends and their implications?

The most significant trend in Canada and Alberta has been the major concentration of population and employment into a relatively few metropolitan regions. (See Table I and II)

The fact that this trend is so clear and persistent would appear to indicate that these large urban concentrations meet some needs and desires in our society. But accompanying the positive advantages of these larger urban concentrations and higher densities, there have been persistent problems and difficulties.

- Compared with the explosive growth of our metro areas, other areas of the province are stationary or in decline. The very high rate of growth in the one instance, and the low rate in the other, both pose difficulties.
- In the urban concentrations, escalating urban land costs are reflected in rising housing costs and in rising costs of land for public purposes. This has, among other considerations, raised particular problems in housing for lower income groups.
- As traffic volumes mount, the existing road and intersection systems suffer



TABLE I
Population Increase 1931-1971
Province of Alberta and Metropolitan Areas of Calgary and Edmonton

Year	Alberta Population	Increase in Alta. Population	Edmonton Population	Increase in Edmonton Population	% of Total Alta. Pop. Increase	Calgary Population	Increase in Calgary Population	% of Total Alta. Pop. Increase	Edmonton & Calgary Population	Increase in Population	% of Total Alta. Pop. Increase
1931	731,605		79,197			83,761			162,958		
1941	796,169	64,564	93,817	14,620	22.64	88,904	5,143	7.97	182,721	19,763	30.61
1951	939,501	143,332	176,782	82,965	57.88	142,314	53,410	37.27	319,096	136,375	95.14
1961	1,331,886	392,385	337,568	160,786	40.91	279,062	136,748	34.85	616,630	297,534	75.81
1971	1,634,000	302,144	470,116	132,548	43.87	400,154	129,092	42.72	870,270	261,640	86.6

NOTE — All increases in population are net increases

— In Edmonton 1971, the 1961 metropolitan boundary has been used.

TABLE II

Population Increase 1961-1971
Metropolitan Areas and Cities of Alberta

Metropolitan Areas and Cities	Population Increase 1961-1971	Yearly ¹ Average Increase	1961-1971 % of Total Provincial Increase
Edmonton Metro Area	132,548	13,200	43.87
Calgary Metro Area	129,092	12,900	42.72
City of Red Deer	7,870	790	2.65
City of Lethbridge	5,252	525	1.74
City of Grande Prairie	4,445	450	1.47
City of Drumheller	2,497	250	.83
City of Camrose	1,709	170	.57
City of Lloydminster (part)	1,659	170	.55
City of Medicine Hat	1,574	160	.52
City of Wetaskiwin	956	95	.32

¹ For comparative average annual increase of other metropolitan areas in Canada (based on 1966-1971 growth)

Toronto 73,000; Montreal 30,000; Vancouver 28,000; Ottawa 13,000;

Winnipeg 5,000; Halifax 2,000; Regina 1,000.

NOTE: Increase in population due to annexations are included in population increases.

TABLE III

TRENDS IN DECENTRALIZATION

Average Annual Increase in Urban Population¹ of the Edmonton Region in Relation to Distance from the City Centre, 1941-71

Miles from Centre	1941-51	1951-61	1961-66	1966-71
0 - 6	7,470	14,400	13,280	13,775
6 - 12	40	585	1,820	2,435
12 - 20	270	270	570	1,115

¹ Communities over 1,000 population

congestion, decisions on freeways and rapid transit become necessary and these involve both massive expenditure and dislocations to the existing urban fabric.

- The demands for open space are increasing as the pressure to utilize them for other urban uses increases. The needs are increasing faster than population growth, as leisure time and higher urban densities increase.
- Air and water pollution increase both in quantity and the number of people affected as the urban concentrations increase in size.
- As local elected officials represent a larger and larger electorate, and administration becomes more complex, communications between local government and the citizens become more tenuous and responsiveness to needs and problems of people more difficult.
- As the gulf widens between the responsibilities assigned to the municipal level of government and the municipal sources of income, pressures mount to re-evaluate and readjust traditional arrangements of local government.
- The form suburban development has taken on the edges of our metropolitan areas has been considered by some to be standardized and anonymous and suggests the need for more vital or varied grouping of development.
- As the size and concentrations of population increase, social problems and problems of safety increase in quantity and in their nature.
- As development spreads over a metropolitan area affecting many municipalities, the need for co-ordination among federal, provincial and municipal agencies becomes more evident.

The form of urban development is intertwined with many of these problems. Therefore, the proposed studies of the Edmonton and Calgary Regional Planning Commissions on alternative solutions for metropolitan growth are of far reaching significance. The purpose of this paper is to provide background information on this matter and to encourage greater informed public participation in the preparation of these plans.

THE PRESENT SITUATION

It is useful to begin by examining the present situation in our two metropolitan areas. The attitude towards future growth for the City of Calgary is clearly stated in its General Plan.¹

"The question (arises) as to whether the city, given its known financial resources, can in fact over the next sixteen years implement all programs presently deemed necessary to maintain or upgrade the quality and quantity of municipal services.²

A review of the form that growth has taken in the past suggests that there are implicit in present civic development policies the following commitments:

1. A commitment to and deliberate encouragement of growth of the city at the maximum obtainable rate.
2. A commitment to private transport and the motor vehicle as the means of movement throughout the city.
3. A commitment to the present form of growth of continuous outward (perimeter) expansion.

What is needed now as a first priority is a detailed economic review of the costs involved in the present form of growth prescribed by artificial boundaries relative to other forms of growth including the possibility of satellite communities.

Pending such a review, the target year for the General Plan has been brought forward to 1978."

In the case of the City of Edmonton six outline plans have been prepared for the perimeter areas.³ Each outline plan involves populations ranging from 40 to 80 thousand people. In addition the rapidly expanding district towns have outline plans for major expansion of population (e.g. St. Albert to 45,000; Sherwood Park to 33,000; Spruce Grove to 18,000, etc.)

In summary, the Calgary General Plan contains commitments to 1978 by which time the results of future growth studies will provide the basis for long term policy. In the Edmonton area, existing plans and policies in some cases contain longer term commitments, and are a greater factor in considering alternative solutions. The present move for large scale annexation would involve further commitments in terms of an examination of choices.

CONCENTRATION AND DISPERSAL OF URBAN GROWTH IN ALBERTA⁴

Planning for the growth of our two metropolitan areas of Calgary and Edmonton has been largely based on the assumption that the past trends of urban concentration in Alberta will continue. The trend has been that 80 to 85 percent of all population growth in the province has occurred in these two areas. (See Table I)

Questions are being raised at a governmental and non-governmental level as to whether

it would not be desirable to have a greater dispersal of this urban population among the ten cities and other towns of Alberta, and whether this might not be of mutual benefit both to the very rapidly expanding regions and to the slower growing or declining regions.

As a province, although general attitudes have been stated, there has not been a systematic examination of the possible measures to modify present trends should this be desirable. There has not been an examination of what specific policies are available nor of what are their probability of success considering similar attempts in other areas?

In public debate, some extreme positions have been taken on this matter; that we should quite simply stop the growth of our two metropolitan regions or that we are dealing with forces that we can in no way modify.

The historical evidence, on efforts to stop metropolitan growth completely is discouraging. Rasmussen in "London the Unique City"⁵ documents in some detail the attempts of Queen Elizabeth in 1580 to stop the growth of London, and of Henry II (1548) to stop the growth of Paris. Similarly Parkins documents the attempts in the 1930's by the Soviet Government to stop the growth of Moscow.⁶ His conclusions are:

"It is evident (in this case at least) that restrictive measures were inadequate to check the growth of the National Metropolis. The Moscow experience might warn over zealous urbanists against restricting growth in metropolitan areas through the application of purely **mechanical** means." By mechanical, Parkins means purely regulatory measures as opposed to adoption of countervailing development policies for other regions.

There are perhaps more useful ways of posing the problem than defining it as a choice between complete cessation of development or uninhibited expansion of an area. There is evidence that public policy, in terms of regulation, public investment and incentives can influence urban growth rates among regions.⁷

It would facilitate planning in our metropolitan areas were urban growth policies for the province formulated and adopted. But whatever our urban policies are on concentration and dispersal of growth among the regions, the metropolitan areas of Edmonton and Calgary must still make decisions on what is the best pattern of growth for their areas; regardless of whether their areas grow at 2% per year or 4% per year.

The Boundaries of Development

In addition to size of the urban concentration, the range of alternative solutions we consider for the development of our two major

urban areas is dependent on the geographic boundaries we set for our study.

Although it may appear extensive, the weight of evidence suggests that we consider an area which is defined by the distance that commuters to the central city find acceptable. In terms of our present transportation systems this would circumscribe an area of at least 25 to 35 miles from the City Centre.⁸ There are a number of advantages in using such an area:

- It is large enough to allow consideration of alternatives, whether these involve additions to the perimeter of our central cities, expansion of adjoining district towns, or new town development.
- It permits consideration of an open space and recreation system for the metropolitan population, both to meet the recreation needs of the area and to provide open space separation between urban municipalities.
- It provides a large enough framework so that the implications of possible future growth (when the metropolitan population may be double or triple its present size) can be logically examined.
- It encloses a single market area for employment since all parts are within feasible commuter range.
- In addition, the social, cultural and specialized facilities of the city centre are accessible to all residents within this area.

Such an area therefore combines the best of two worlds. It combines the advantages of access to metropolitan employment and services while providing a wide range of choices for development.

THE SIGNIFICANCE OF URBAN FORM STUDIES

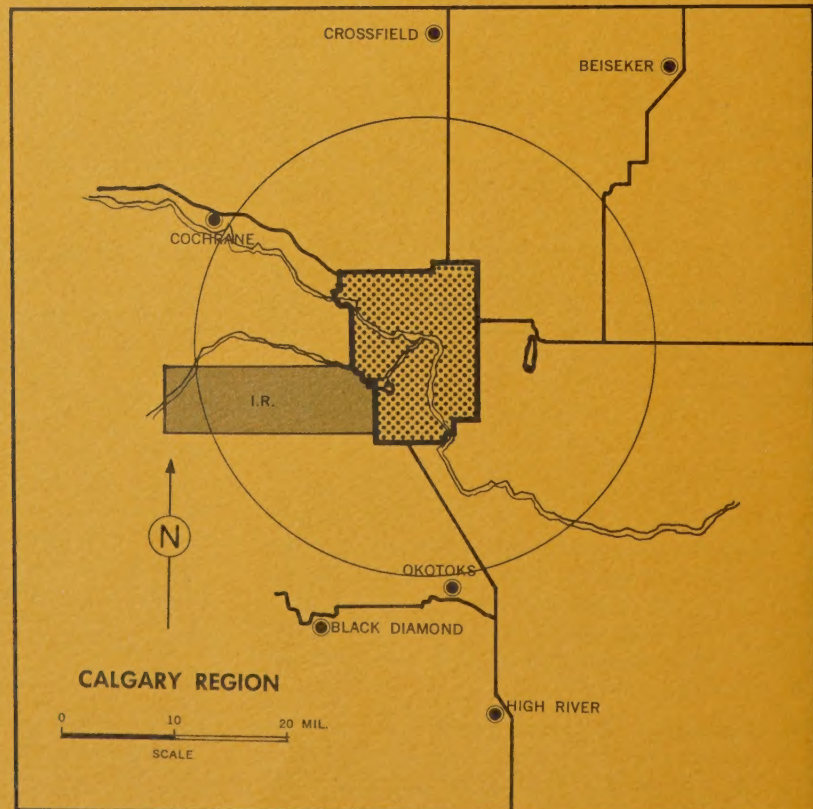
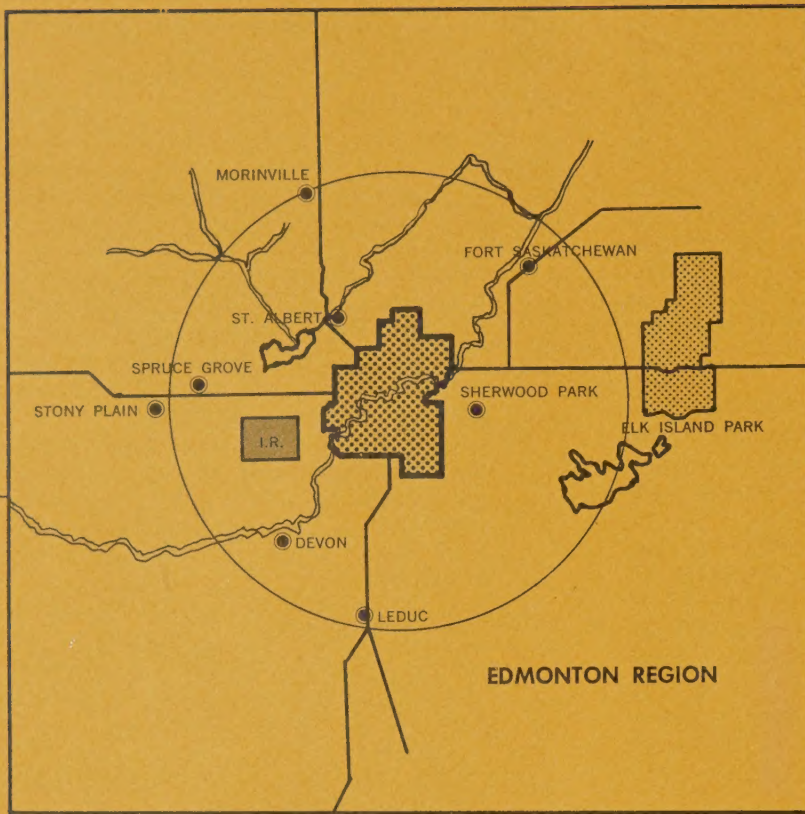
Within such a city region there is no formula available to determine the ideal form for urban growth. It is essential for each area to examine the choices available in terms of its needs, its aspirations, its economic capability, and its site potential.

For this matter to receive the attention it deserves or for the necessary public participation to be generated it is essential that its significance becomes more clear: that the implications of urban form be expressed in terms of our daily urban activities.

What some of the implications are, may be illustrated by the following examples:

Land Costs

If we confine metropolitan development to perimeter growth of our central cities we will invariably be bumping into a wall of high land



costs in relation to areas 10 to 20 miles beyond the city.⁹ These higher land costs are reflected in overall development costs including housing and land for public purposes.¹⁰ In terms of housing, these higher costs can be counteracted by public acquisition of land, by subsidies to serviced residential lots, by higher densities (less land per dwelling unit), and so on.¹¹ In terms of open space it can be counteracted by larger expenditures for public open space or by reduction in quantity of that space. It is apparent that the degree of centralization or decentralization has an influence on land costs which in turn has implications for such matters as the choice of single family or multiple dwellings for various income groups. The degree of centralization or decentralization affects the adequacy or costs of our park and recreation system and so on. It is not suggested that land cost is the only or even the most significant factor in development costs. However, both in Edmonton and Calgary, it has been of sufficient significance that it deserves careful consideration in examining alternative forms of urban growth.

Open Space, Park and Recreation

In addition to the effects land costs may have on the open space system, there are a number of other aspects of that system which must be taken into account in making urban form decisions. One relates to determining those areas in the region which are most valuable for park and open space. In practical terms the scenic wooded sites of our two metropolitan areas do not occur evenly around the perimeter of our cities. In the Edmonton region for instance, they occur mainly in two river valleys located centrally to the city and several of the towns. A policy therefore which adds thin layers of growth around the perimeter, will remove residential development farther and farther from the most suitable open space areas. We may attempt to redeem the situation by creating woodlands on the bald prairie, but this is expensive and time consuming. Other urban forms which more fully utilize the landscape potential therefore suggest themselves and are worth examining. (e.g. orienting development lineally along either side of the river valley.)

Beyond these park and recreation considerations there is the more general question of conservation. To illustrate this point, we might look at Big Lake which is a few miles northwest of Edmonton and adjacent to the Town of St. Albert. The lake is a major staging area for migratory birds in Western Canada. A decision by either Edmonton or St. Albert to expand residential development around the lake perimeter will have unpredictable conse-

quences for enumerable species of migratory birds.¹² Some important decisions on urban growth policy are involved in the preservation of this resource.

Transportation

Transportation in our two metropolitan areas has been the subject of more study than any other aspect of urban environment. Despite this it may not be widely understood that the choices we have to make involve not only more or less freeways, or more or less rapid transit, but as well various patterns of residential and employment concentrations. Certain patterns of land use and employment will have certain transportation implications.

If we attempt to concentrate increasing employment in the centre, and develop the perimeter suburbs essentially for low density residential use we generate certain problems and create biases for certain solutions. We create increasingly larger traffic volumes to the centre. We also make rapid transit less economical because of the adjoining low density residential development. Freeway solutions quite apart from costs can be achieved only by very substantial dislocation of the older areas intervening between the centre and the outlying suburbs. This is not to suggest that there is a simple land use policy which will be both sound in terms of the location of economic activities and which will resolve our transportation dilemmas. However, there seem to be alternative land use densities, and employment location policies which may have advantages in terms of both transportation and the urban environment.

Another important factor in our transportation approach in the urban region is fragmentation of responsibility for urban transportation. Some towns within twenty miles of our central metropolitan cities are expanding rapidly. In the absence of regional policies and programs to encourage decentralization of employment, these hold largely people who commute to the central city. Since these areas are beyond the boundaries of the city transit systems, we are creating increasingly large residential areas completely dependant on the automobile. This has important social and transportation cost implications.¹³

Utilities

One of the large areas of municipal expenditure are the major utilities, sanitary and storm sewer and water. The costs can differ widely depending on the form of urban development. For example, the Edmonton Regional Planning Commission Water Supply Study indicated some of these cost differences, and also indicated the degree to which present water

policies were shaping the growth of the region. Due to the characteristics of ground water and surface water availability in our metropolitan regions, the towns in both the Edmonton and Calgary area are heavily dependant on the central city supply system. Their growth possibilities therefore depend on the extent to which costly water extensions can be financed.

Municipal Assessment

Our present system of municipal taxation provides the incentive for each municipality to attract the maximum of commercial and industrial development and the minimum of residential and institutional development. In terms of urban form this has had a number of consequences. Since housing in our metropolitan areas has decentralized much faster than industrial and commercial development, the mill rate in the district towns have increased at a rate which may create a deterrent to further development. The tax system may hinder instituting the most economical expansion to metropolitan development.

More significantly, the tax system creates a situation in which balance of assessment is strived for and in which the specialized community may not be viable. Theoretically, there is no particular reason, if we disregard assessment considerations, why a constellation of specialized communities based on access, site, historical development, may not have considerable merit. A practical example is the Town of St. Albert, which is historically an institutional centre, which has a hospital, a cathedral, a seminary, a museum and there is the possibility of a university being built there. It has a fine pastoral setting, and is less well situated for many types of industry than many other towns in the Edmonton area. It fulfils a useful role in the service of the region. The fact that this town should strive to obtain industry to keep its mill rate within tolerable limits may indicate some irrationalities that the present municipal assessment and taxation policies can introduce into the planning process. Certainly some alternative forms for metropolitan growth can only be considered on the basis of a regional government, or on the basis of tax transfers within the region, or on the basis of the assumption of the province of responsibility for certain services.¹⁴

Service Functions

In terms of urban form there are a number of ways in which urban services can be located so as to affect convenience, transportation, and the character and cohesiveness of urban communities. Higher education can be concentrated in a single grouping in the central city or portions can be decentralized to district towns.

Hospitals, health services and libraries can be similarly viewed.¹⁵ Commercial development can be highly concentrated in shopping centres at two or three mile intervals or, some elements can be much more widely distributed than they are now.

Each of these services has certain constraints in terms of locational requirements or economy of scale. But, even taking this into account the matter has been given less critical examination than it deserves.

The most articulate critic of present tendencies to concentration and separation of urban land uses has been Jane Jacobs.¹⁶ It is worth considering some of the weaknesses of our present approach which she discusses. Her view is that commercial, service and professional functions should be far more intimately and organically related to residential development in order to preserve the cohesiveness of communities and the social vitality of areas. Perhaps for instance, there should be small commercial establishments in the same block as residential development — a small grocery — a doctor's office — a pub, etc.

Urban Form and Pollution

Air pollution is a significant factor in considering urban form. Due to concentrations of heavy industry, prevailing winds, land form, etc., certain parts of the metropolitan area are much more adversely affected than others, and this becomes one of the selective factors for the form and direction of residential expansion. Noise pollution as it relates to airports, may introduce the need for discontinuous perimeter expansion in the interests of a tolerable environment.

Urban Form and Government

The choices we make on urban form will have strong implications for the administrative and local government arrangements. Here, these can only be discussed on the most general level of centralization and decentralization.

Largely perimeter expansion will probably involve, if past Alberta experience is any indication, a single municipal government whether this is for a population of 500,000 or 1,000,000. Such an arrangement would have good potential for creating an efficient planning and development unit. However, there are many who believe that this would also result in a loss in municipal responsiveness to individual and local community viewpoints. In this situation the need may emerge for wards or districts, defined by community interest, to which limited functions may be assigned.¹⁷

A more decentralized system requires, for effectiveness, regional government or at least

regional planning and financing agencies for utilities, transportation, regional parks and recreation, etc. For instance, as has been noted previously, serious difficulties may emerge if our district towns have major expansion without a regional structure to organize public transportation. The same is true for other types of utilities and services.

Similarly with a decentralized system, tax inequities which arise because different communities have different concentrations of industry, of institutions, or of high or low income housing will not in the long run lead to sound regional growth. The need for some redistribution of tax revenues across the region will assert itself.

The point which is important is that administrative arrangements must be related to the urban form they are intended to serve. In much of the current discussion on annexation, or municipal taxation, etc., there seems limited attention given to this fact.

These brief comments on the various aspects of urban form may be sufficient to indicate that our urban form policies affect and are affected by physical, social, economic and political factors and that urban form far from being only an abstraction, touches on the practical concerns of urban living.

As the Science Council of Canada has pointed out in a recent publication, "in the past, urban design has stressed architectural and geometric factors. It has not adequately dealt with the interacting dynamics of people, industry, housing, the aging of buildings, and the pressure for expansion."¹⁸

In order to make more realistic or creative decisions on urban growth policy it is necessary to document our available choices and their implications. Relatively little has been done to date in Alberta on this question. There has been a tendency for the boundary of each municipality to define the horizon of our possibilities. However, there is a changing attitude as indicated by the fact that this matter is now under study for Edmonton and Calgary.

These studies will require a high level of technical analysis. Another requirement will be the definition of our urban goals, objectives and priorities so that we have some basis for evaluating our alternatives. This definition of goals should involve very extensive public participation and debate if the plans are to reflect the varied needs of a complex society.

THE NATURE OF URBAN FORM STUDIES

The studies on this matter which have been undertaken in Canada to date have of neces-

sity been complex.¹⁹ In this paper it is only possible to touch on some of the salient features.

Organization

Within city-centred regions, rural and urban municipalities, provincial departments and federal agencies all have areas of jurisdiction and make decisions which affect development.²⁰

In Alberta we are in the fortunate position that our regional planning agencies do have representatives from the province, the urban and the rural municipalities. On a federal level there is now a clear recognition of the impact of federal policies on urban areas. A Ministry of Urban Affairs has recently been established to co-ordinate the policies of federal departments in the urban field. If arrangements could be made to have this Ministry represented in the urban form studies being undertaken by the Regional Commissions, it would provide the organizational structure for all three levels of government to participate in the formulation of urban policy.

A realistic plan, probably cannot be prepared without this sort of co-ordination and the organization of any urban form study should provide for it.

The Elements of the Study

Despite the complex technical questions involved, the content of our urban growth studies can be indicated in simple terms. How much land do we need for housing, for industry, for major commercial and public services, and for our metropolitan open space system? What are their general site requirements?

What are the existing major site advantages for urban development, the main conservation elements and the recreation and open space system of the region?

What are the feasible choices we have in arranging these activities?

What are the relative costs of these alternatives in terms of utilities, transportation and land?

What are the implications for the private and public sector of the economy?

What are some of the social implications?

What are the implications of centralized and decentralized solutions on municipal finance on the need for regional government or special agencies?

How adequate are our present administrative structure and legislation to implement one solution or the other?

Once the studies have outlined feasible choices and some of the costs and implications, what goals and objectives do we use to assess the virtue of one as compared with the others?

The intricacies involved in these questions will emerge as the metropolitan growth studies proceed.²¹ It may be of value however, to elaborate on the possible alternative forms of growth and the goals and objectives.

ALTERNATIVE FORMS OF GROWTH

It may be argued that our present form of metropolitan growth, although it has imperfections, is the best possible. That it represents a combination of the rational economic location requirements of private industry, and economy and efficiency in the provision of public utilities and services by the municipalities. This would be difficult to prove or disprove without an examination of the alternatives that are available.

Some of the alternatives may be indicated by examining the changing nature of urban form policies we have pursued in Alberta, and the experiments in urban form conducted in other areas. For instance, in the Edmonton area, policies have evolved with regard to urban growth on the perimeter, in adjacent new towns, and district town development.

In the suburbs substantial changes have occurred in the past twenty years. From a random addition of houses on the edges of the city, we have moved to growth by structured neighborhood units, and more recently by means of new districts on the perimeter of the city, involving populations of from 40 to 100,000 strongly focused on their own commercial and social centre and self sufficient in terms of high schools and district parks.²² There has been a trend from the exclusive concentration of high density and low income development in the centre to its wider distribution in the suburbs. Public ownership of land has recently been accepted as one device to modify land costs in the metropolitan area.²³

New town legislation was utilized to assist in the development of the Town of St. Albert.²⁴ Outline Plans have been prepared for some of the towns (up to twenty miles distance) to accommodate increasing growth due to differential of serviced land costs as compared with costs in that city.²⁵

Some regional policies have been formulated, and by and large observed, which have greatly effected Edmonton's form (eg. the restriction of regional shopping centres to urban areas, the retention of the North Saskatchewan and Sturgeon River Valley and ravines to public and private recreation, the restriction of urban development on the boundary of an urban area unless annexed to that urban area). A combination of these policies with some amalgamations has resulted

in the present situation where both our metropolitan areas encompass fewer municipalities than they did twenty years ago.

The City of Calgary has witnessed to date, far less decentralization but many aspects of city and regional policy have similar characteristics to Edmonton (however, there are indicators such as recent annexation applications, which suggest pressures to move beyond the present city limits).²⁶ We have therefore in Alberta utilized a variety of methods to accommodate urban growth in various forms and we have integrated services for our suburban communities.

The decisions have by and large, not been based on a rigorous examination of regional alternatives, the advantages and disadvantages of each, and the conditions under which each would be most effective. We are not in a position to say that better solutions were not and are not available.

On a theoretical level it is possible to give some indication of what sort of choices there may be and some of the implications of each.

Perimeter Expansion Alternative

There are two major advantages in perimeter expansion to the central city. The new area by simple annexation can become part of the central city. This simplifies administrative arrangements. Secondly, the central city has the borrowing capacity to finance the utility extensions. The compactness may also reduce lengths of trip to the central area.

However, there are a number of potential weaknesses in this system of expanding outward "over hill and over dale". We have mentioned one — that you are always working within a wall of high land cost. Another weakness relates to the lack of selectivity. The new development is not particularly related to the open space system, to the best natural sites for parkland, to the logical process of utility construction in relation to drainage areas. It can also involve the over-running and absorption of nearby smaller communities, or the engulfing of the heavy industry pollutant areas. Since most suburban development, under present policies, is not concerned with maximum local employment, added loads on the transportation network may be generated. This constant accretion to size, unless accompanied by some decentralization of decision making to the ward or district level, may lead to a lessening of public participation in local government or a lessening of responsiveness to specific local needs.

The Satellite Town Alternative

This may involve major expansion to an existing community or the development of a

new site. There are a number of advantages to this system — it can be selective — sites for development can be those most appropriate for urban development, utility economies, etc. It can relate positively to the open space system. It may have substantial advantages in terms of initial land costs. It offers variety of choice for people who prefer living either in the large or small community without sacrificing metropolitan advantage. It can reduce commuting distances. It can provide an easily accessible, high level service centre to the surrounding rural population.

The difficulties of the system are that major new financial or administrative devices are required to make it work well. The district towns often have not the borrowing power to most efficiently provide the utility expansions. At the present time, furthermore, no legislation specific to metropolitan new towns exists.

Secondly, there may be difficulties in attracting industries and employment outward.²⁷ A high degree of regional co-operation is necessary to achieve this. If employment is not attracted to these areas they become largely dormitory and the journey to work is even longer than if they lived in the suburbs.

This system requires some kind of regional mass transportation arrangements if the population is not to be 100% dependant on the motor car.

Staging is a major concern with the satellite approach. If housing develops much more quickly than commercial and industrial development, it creates stresses in municipal finances and the demands for regional transfers of revenues.

Lineal Development Along Transportation Corridors

The main advantage of this form is that it fully utilizes and gives easy access to the major transportation links. It therefore, can also produce transportation economies.

This form permits great flexibility of development in relation to the established open-space system. If developed in relation to major land features such as river valleys, it may have much merit in terms of quality of the urban environment. It can provide commercial services and facilities deep into the rural areas.

The disadvantages stem from a lack of compactness in sectors not along transportation corridors. New growth takes place at increasingly greater distances from the city centre and lateral connections to communities in other corridors must be developed. Potential difficulties may emerge because of the very high concentration of traffic along the corridor into areas closest to the centre.

Other Possibilities

One could examine such significant options for urban form as: increasing densities within present city boundaries, highly concentrating growth in the downtown core, establishing rings of growth, etc. Further there are innumerable combinations of forms which might be developed in any given metropolitan area. Thus the examples discussed above have value, only insofar as they illustrate the kinds of considerations which must be taken into account in arriving at decisions on metropolitan growth. The discussion is by no means exhaustive. In the end the unique factors of each region will suggest the most appropriate urban form.

EXPERIENCE IN OTHER AREAS

Other metropolitan areas both in Canada and abroad have pursued quite different growth policies from our own. Since their circumstances differ greatly from ours these experiences may not be of direct benefit to us. However, a discussion of them can indicate both the great variety of possible urban forms and the kinds of emerging problems which the planning theory in each case did not foresee. In this regard, it will be useful to examine other experiences with green belts and open space systems, degrees of decentralization, balance of employment in the various communities making up the metropolitan area, and administrative and development arrangements.





Open Space Systems

A comparative analysis of the growth policies for London, Copenhagen and the Amsterdam/Rotterdam conurbation reveal widely different approaches to regional open space policies. The London area has followed a policy of encircling the existing urban development with a green belt with new developments channelled into towns beyond its outer rim. The Copenhagen policy has been described as the finger-plan — with development confined in a lineal form along transportation corridors and the open space green belt system being wedges between these fingers of development. The Amsterdam/Rotterdam example contains a constellation of specialized cities with the agricultural open space central to them and separating them. Other examples such as the recent Toronto plan alternatives could be cited which reveal quite different solutions. What strikes one is the importance which all these areas, for a variety of reasons, place on a major metropolitan open space system.

It is apparent if one examines these examples that the metropolitan open space system involves a whole range of urban concerns. Some of these would include providing adequate amounts of recreation space for the urban concentration, providing the transportation and ease of access to this open space, the preservation of specially endowed natural areas, and general conservation. The open space system has implications for government policy. For instance green belts may be used to separate the smaller communities from the central city so that they are not absorbed

in its outward expansion. Open space also involves values more difficult to define, such as the psychological relief offered by natural landscape breaks in the unending urban spread.

In terms of how a system can accommodate growth and change, it is probably fair to say that the lineal or finger plan (Copenhagen) has shown more flexibility and resilience than the circular green belt. In the former, urban development and the open space system can be expanded with only minor dislocations.



Decentralization

Many of the European metropolitan areas have, to varying degrees followed policies of decentralization through the expansion of existing regional towns, through establishing large or small new towns, and even where the form has been along transportation corridors, through discontinuous development along the corridors.

New town solutions such as in the London or Stockholm area have involved public assembly and ownership of land. Some have

been administered by new town corporations, others although separated from the central city, have been administered and been considered a part of these cities. Transportation, both road and rapid transit, to the central city have been considered an integral part of the planning of such towns.

In terms of balance of employment the English have pursued a policy of the decentralizing of manufacturing industry to new towns. By means of incentives and regulation they have generally achieved their planning objectives in this regard.

More recent reviews of the London New Town program indicate that if central city concentration is to be counteracted, office and administrative functions will have to be attracted outward.²⁸ To attract these functions it has been suggested that larger concentrations than the 60,000 to 80,000 population of the existing new towns will be required.

In new towns elsewhere, less stress has been placed on balance of employment and more on the provision of a high level of transportation connections to the central city (rapid transit and road), a full range of commercial and service functions, and a high level of residential environment.

A third approach has been that of the Randstad (Amsterdam/Rotterdam) region. This has involved a constellation of specialized cities. In terms of the relative value of this system of employment distribution, it is worth quoting Hall "the unique advantage of the Randstad is its polycentric quality. If Britain or France also had developed their government, commercial and financial functions in separate but nearby cities, they would suffer less intractable problems today, but history decided otherwise".²⁹

It is evident from the above that some metropolitan areas have found it possible to pursue conscious growth policy in the context of their city region. And that these policies have taken into account physical, social, economic and political factors.

What is important of course is not that these logical and complex methods have been applied to metropolitan development but whether they have produced a better urban environment for people. This raises the question of our value system.

GOALS AND OBJECTIVES — WHAT KIND OF URBAN ENVIRONMENT DO WE WANT?

The current literature on urban planning is devoting considerable space to the question of urban policy, goals, objectives and priorities.³⁰ It is concerned with whether we can

co-ordinate federal, provincial and municipal activities in the urban area unless we have formulated some goals and objectives and have reached some general agreement concerning them, or on a more fundamental level whether the urban environment truly reflects the diverse preferences of the urban population.

There are, no doubt, various attitudes on this matter: that our goals and objectives are generally known, even though they may not have been clearly stated, that in a complex urban area, the varied and conflicting interests and preferences do not lend themselves to any useful simple statement of goals and objectives, and so on. Whatever the attitude, it is likely that any urban form study will generate debate on this matter, and this may be one of its virtues.

The following examples may illustrate some difficulties and some current approaches, in defining goals and objectives.

The Alberta Planning Act, which provides guidelines for urban planning does in fact state objectives: Section 3 states that the objective is to achieve the orderly and economical development of land.

Since a military barracks is a particularly good example of orderly and economical development, it would appear that order and economy are incomplete objectives in themselves to guide urban development.

A second example which indicates a wider range of concerns, was published a number of years ago by the City of Montreal Planning Department in connection with its regional plan. It lists a series of goals: adequacy, accessibility, diversity, singularity, stimulation, identification, health, safety, comfort, resilience, etc., with a short accompanying text to clarify the meaning. Although these goals would provide no simple formula in deciding among alternatives, any plan would benefit by being examined in terms of this range of consideration.

A more complex approach was used in the Metropolitan Toronto Growth Study. (See Appendix II.) The regional goals are stated in terms of economic structure, land, environment, accessibility, cost and capacity for change. For each, a set of criteria is given to aid in accessing the alternatives. These goals and criteria may or may not validly represent the urban attitudes of this region, however they are in a form which permits constructive public debate, and which permits a clarification of urban attitudes.

This raises the question of who formulates the goals and objectives, and how do we ensure they reflect the diverse citizen interest.

There are those who argue that the matter is now reasonably well handled and there is adequate public participation, or that there is limited public interest, or that the matters are of a technical complexity that precludes wide public discussion, or that the final decision rests with elected officials who fully represent public opinion. Those who argue for greater public participation say that there is a large measure of public disaffection with present processes and we will find methods to link the public to the decision making process, or we will (as in other areas) face massive confrontation. (The very large measure of citizen resistance to even minor zoning changes in our metro areas indicates that when the effect of a planning decision is understood, the apathy may be less than we suppose.)

In any event, our planning agencies are generally moving towards a larger measure of participation in formulating planning policy.³¹ Related to the urban form studies there are a number of ways to link this participation to the planning process.

1. Rather than after several years of technical study emerging with a proposal, we can present a range of alternatives and the implication of these alternatives. That is we can regard decisions making as a judicious choice from among alternatives rather than an acceptance or rejection of a proposal.³² In any event the matter is too complex for an either/or solution.
2. We can make the background information and the issues involved widely and easily available in comprehensible form.
3. We can publish this material in the process of the study so that time is available to examine it prior to the publication of choices and options.
4. In the work program for the study we can clearly indicate how public and private agencies and citizen opinion relate to the study and the points in the study at which this information can most usefully contribute.
5. We can utilize measures and devices which we have not as yet fully explored to inform and involve interested groups.
6. We can ensure that interest groups committees are established which represent a wide range of opinion in these matters (eg. small towns, rural landowners, urban developers, park and recreation groups, industrialists, etc.).
7. We can facilitate arrangements so that these groups discuss matters not only among themselves but with one another, and so on.

There is no guarantee that these methods will result in a broad consensus on goals and priorities, or that they will avoid frustrations and delays in the final acceptance of planning proposals. There is some reason to believe that they will be an improvement over the present process.

SUMMARY

Rates of Regional Growth in Alberta

There is a very large difference between the rates of growth of the various regions of Alberta. It may be mutually beneficial to all regions to attempt to reduce the higher rates of growth and increase the lower. It would be of value to examine the range of policies and programs that may be effective in this regard.

Growth of Our Two Metropolitan Regions

In determining the form of growth of our two metropolitan regions we have been inclined to believe that adding a thin layer of growth around the central city is our only option.

We have been reluctant to acknowledge that a highly inter-related city region exists within commuter range of the central area, and that within such an area there are many and varied choices in terms of growth alternatives.

There are a number of reasons why at this time we should more closely examine these alternatives. They have varying effects on the quality of urban living. Over the next few decades they will affect the environment of new development involving hundreds of thousands of people. They will involve many millions of dollars of public investment. We should therefore ensure that we have truly explored the range of possible solutions. This requires urban form studies which define the feasible choices and their implications, taking into account social, physical, economic and governmental factors.

Such studies are being considered by the two Regional Planning Commissions and should receive the fullest support of the municipal, provincial and federal levels of government. If these studies are to achieve maximum benefit, they must be designed to permit a large measure of public involvement.

Questions

A number of questions have been raised in our discussion of metropolitan growth. The more significant would include:

Concentration and Dispersal (Growth among the regions of Alberta)

1. In considering measures to modify the growth pattern among the regions of

Alberta (should this be desirable), to what extent will we use dispersal of public services and governmental functions, public investment, public incentives to private development, selective public development of industries, transportation policies, manpower re-training programs, regulations, constraints, etc.?

2. What is the proper and necessary balance between incentives and constraints?
3. What economic activities are so oriented to metropolitan locations that constraints will result in their locating in some other metro area in Canada rather than to other cities or towns in Alberta?

Urban Form Alternatives (Growth within the city centred region)

4. What kinds of studies do we need to

determine our growth options and the implications of each in terms of the urban environment? What priorities are we placing on such studies?

5. What should be the boundaries within which we examine our alternatives? What time scale are we planning for?
6. How do we achieve some consistency of policy among the levels of government making decisions within such an area (federal, provincial, municipal)?
7. How do we ensure that the goals and objectives used to evaluate these studies reflect the human values of the urban population? To what extent is it possible to prepare plans that are cognizant of minority preferences?
8. What devices can we use to gain a wider measure of public participation in the process?



Appendix I

FORECAST OF CAPITAL EXPENDITURES 1970-1986, CITY OF CALGARY^a, 1966-1969 ACTUAL AND 1970-1986 ESTIMATED BASED ON THE ASSUMPTION THAT PROPOSED PROGRAMS WILL BE CARRIED OUT*

Thousands of Dollars

Item	1966-1969		1970-1972		1973-1978		1979-1986	
	Total	Average Per Year	Total	Average Per Year	Total	Average Per Year	Total	Average Per Year
Transportation								
Transit System ^b	3,200	800	4,510	1,503	90,748	15,124	58,598	7,324
Freeways, Expressways and Major Streets ^b	54,017	13,504	85,963	28,654	176,109	29,352	219,765	27,470
Traffic ^b	1,619	404	1,242	414	2,964	494	4,904	613
Total	58,836		91,715		269,821		283,267	
General Municipal and Utilities								
Civic Garage ^b	1,810	453	2,324	775	4,152	692	4,520	565
Electric System ^b	20,842	5,210	19,269	6,423	55,750	9,291	98,164	12,270
Sewers ^b	22,087	5,521	15,955	5,318	14,000	2,333	47,000	5,875
Water Works ^b	8,101	2,025	20,043	6,681	10,651	1,775	9,634	1,204
Special Projects ^b	298	74	220	73	4,750	792	2,000	250
Equipment ^b	2,872	718	2,007	669	4,300	717	6,000	750
Miscellaneous ^c	3,652	913	1,947	649	2,400	400	—	—
Total	59,662		61,765		96,003		167,318	
Protection of Persons and Property								
Fire & Police Protection ^c	1,778	444	1,899	633	2,004	334	2,278	284
Community Services								
Health & Hospitals ^c	5,918	1,480	325	108	870	145	1,510	188
Parks ^c	11,411	2,852	8,871	2,957	9,980	1,663	12,010	1,501
Libraries & Art Galleries ^c	276	69	2,100	700	5,725	954	600	75
Social Services ^c	274	68	—	—	—	—	—	—
Public Housing ^c	5,928	1,482	20,430	6,810	—	—	—	—
Urban Renewal ^c	—	—	9,740	3,246	—	—	—	—
Total	23,807		41,466		16,575		14,120	
Total all Programs	144,083	36,021	196,845	65,615	384,403	64,067	466,933	58,372

* Calgary Plan

Appendix II

Regional Goals¹

FROM REGIONAL GOALS TO REGIONAL CITY

Since the selected goals are complementary, it is possible to synthesize them into a coherent definition of what we seek. From the regional goals we can describe a regional city — in a developmental and not a political sense — with the following characteristics:

- A regional centre containing the most specialized activities of the region — business, cultural and civic — highly accessible to all parts of the developed region, making these activities available to all.
- Subregional centres providing general services of considerable diversity close to residential communities that form distinct urban entities.
- Work places distributed to meet four main requirements of the regional economy: activities oriented to a regional centre; activities oriented to sub-regional centres; activities, such as relatively "foot-loose" manufacturing, oriented to the regional expressway network; and activities such as a steel complex, with highly specialized locational needs.
- A development form that takes maximum advantage of the natural landscape endowments of the region — the dominant fact of Lake Ontario, other lakes, streams, ravines, wooded areas, hills and the Niagara Escarpment; and

which minimizes the use of productive farmland.

- A development form that permits the most rational and economic basis of providing public services.
- A form that is consistent with demographic, social and technological trends with their bias towards increased mobility, greater flexibility in the location of homes and workplaces, larger production and administrative units, multiple type housing forms, education and increasing affluence with attendant effects on leisure and housing.
- All of which is tied together by a transportation system that is geared to a high level of accessibility from residential communities to major locations of work, service and leisure activities, making available the benefits of the regional city to its entire area.

This is the general concept, the adopted model, that will be compared with the Trends Plan and that will guide the formulation of the Goals Plans.

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4. To avoid confusion the following terms are used in this paper
Concentration and dispersal refer to the location of urban development as between city centred regions, ie. Toronto, Edmonton, Calgary, Red Deer, etc.
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